Astronomy

4-3 The student will demonstrate an understanding of the properties, movements, and locations of objects in the solar system. (Earth Science)

4-3.5 Explain how the rotation of Earth results in day and night.
Taxonomy level: 2.7-B Understand Conceptual Knowledge

Previous/Future knowledge: In 1st grade (1-3.1), students compared the day and night sky but did not relate that to the Earth's rotation. First grade (1-3.3) also recognized that the Sun and the Moon appear to rise and set but the explanation of the cause was not addressed at that time. In 8th grade (8-4.4), students will study many of the motions of the Earth and Moon and relate those motions to various effects.

It is essential for students to know that:
- Earth *rotates* (spins) on its axis and completes one rotation in 24 hours.
- Earth rotates from west to east, therefore, the Sun appears to rise in the east and set in the west.
- Because of this rotation, only the side of Earth facing the Sun is lit and therefore experiences day; the side of Earth not facing the Sun experiences night.

It is not essential for students to know about the rotation of other planets.

Assessment Guidelines:
The objective of this indicator is to *explain* how the rotation of Earth results in day and night; therefore, the primary focus of assessment should be to construct a cause-and-effect model of how rotation causes day and night. However, appropriate assessments should also require students to *recall* information about rotation; or *illustrate* day or night on a model or drawing.